

2 REGIONAL CONTEXT RISK-BASED END STATE DESCRIPTION

This section is intended to place the LANL site within its larger geographical context. This context establishes the major regional participants in site risk discussions and analysis. The major regional population centers and land surface features are shown in relation to the site. Non-LANL sources of human and ecological risk are shown to establish regional factors to consider when determining overall risk. These features are shown for the current conditions in 2003 and for the risk-based end-state vision date of 2035.

The extent of these maps is quite large. The maps extend south to the northern edge of the city of Albuquerque, more than 40 miles (64 Km) due south from the LANL site, and north to the boundary of the northern most watershed influenced by LANL activity. The eastern extent captures the city of Santa Fe and the foothills of the mountains beyond. The western extent is closest to the LANL boundary because the nearby ridge separating LANL from the rest of the Jemez Mountains serves as the origin for all drainages crossing the LANL site. The maps are not centered on LANL, as the large population centers are present south of the site.

2.1 Physical and Surface Interface

Figures 2.1a and 2.1b show the physical and surface characteristics of the region surrounding the LANL site, including features of administrative, transportation and infrastructure, surface configuration, and hazard areas of concern.

These maps emphasize the remote character of the LANL site. The small towns of Los Alamos and White Rock are the only population centers directly adjacent to the LANL boundary. The maps also show the rugged nature of the local terrain. The many canyons and mesas that compose the LANL site are evident as is the flow pattern created by the Rio Grande, the major river in the region.

The maps also illustrate the complexity of the land ownership patterns in the area. The US Forest Service, US National Park Service, San Ildefonso Pueblo, Santa Clara Pueblo, Cochiti Pueblo, State of New Mexico, US Bureau of Land Management, Valle Grande National Preserve, and Los Alamos County are all major stakeholders in LANL operations.

There are no expected physical surface changes in the time-frame during which EM's mission will be completed and the risk-based end state achieved. Land use at LANL is expected to change to accommodate new facilities, but they are not highly visible at this scale. Land transfers are also expected to change land use and boundaries, and except for a few major transfers, they also do not show as major land ownership changes at this scale.

2.2 Human and Ecological Land Use

Figures 2.2a and 2.2b show the human and ecological land use characteristics of the region surrounding the LANL site, including features showing population centers, land cover / land use, ecological activity, and hazard areas of concern.

The largely undeveloped nature of the area surrounding the LANL site is evident from these maps, with most land used for non-urban activities or protected and managed for natural resources.

Again, no major changes in land use are anticipated near the LANL site in the time frame under consideration. The cities of Santa Fe and Albuquerque are expected to grow, though estimates of this growth are varied and highly dependent on future water supplies in this arid region. The highway corridor between Santa Fe, Espanola, and Los Alamos may experience limited growth, but these roads cross Pueblo land and growth will depend on the goals of the local Pueblo Governments. The road west from LANL crosses National Park Service and Forest Service lands and further development along this route is not expected.

2.3 Satellite Image

To further illustrate the unique nature of the regional topography, a color enhanced LANDSAT image is shown in Figure 2.4 (no custom maps are available at this time for Figure 2.3). The large feature in the northwest of the image is the Valles Caldera, an ancient volcano caldera system that created the Jemez Mountains. The major river, the Rio Grande, and its drainage system are clearly visible. The agricultural activity along the Rio Grande can be seen as well, and the sparse nature of wild vegetation away from the mountain ecosystems is evident. The volcanic origins of the area are clear in the numerous ancient lava flows and structures in the valleys.